

History of Medicine

Asclepius, Caduceus, and Simurgh as Medical Symbols

Part I

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Abstract

This is the first of two articles reviewing the history of medical symbols. In this first article I have briefly reviewed the evolution of the Greek god, Asclepius, (and his Roman counterpart Aesculapius) with the single serpent entwined around a wooden rod as a symbol of western medicine and have alluded to the misplaced adoption of the Caduceus of the Greek god Hermes (and his Roman counterpart Mercury) with its double entwined serpents as an alternative symbol.

In the second part of this article (to be published later), I have made a tentative suggestion of why the Simorgh might be adopted as an Eastern or an Asian symbol for medicine.

Keywords: Asclepius • Caduceus • medical symbols • Simurgh

Introduction

Symbols are powerful representational tools in the evolution of cultures, and in the history of medicine, few have survived the vicissitudes of time and the changing fashions, except the image of the serpent. Images of the heart, the eye, the liver or the brain have represented attributes of human health, emotions or cognition in particular contexts but none are inclusive symbols of medicine and the practice of its art in the way that the serpent in association with Asclepius and the Hermetic Caduceus have symbolized medical practice since ancient times.

The snake or the serpent has been an evocative symbol whether in the form of a dragon in Chinese mythology or the snake in the Judeo-Christian tradition in relation to the fall of Adam and Eve from grace or Moses' staff in Egypt, as well as in Hindu mythologies.

Whether in a Freudian (sexual) or Jungian (collective unconscious) connotation, the serpent has played a significant role in the interpretation of human psyche. In evolutionary terms, the fear that

the sight of a serpent evokes in the perceiving mind is well documented even in non human primates.¹

The reason that such an awesome apparition should be associated with the art of healing is perhaps lost within the mists of human mythopoeia and is outwith the scope of this essay, but some historical connections might be useful in order to shed light on some aspects of this symbolism.

Ancient symbolism

One of the oldest known associations of the serpent with healing and magic is a depiction of the ancient Sumerian fertility god, Ningizzida, who later became a god of healing, represented by two snakes entwined around a rod accompanied by two gryphons (Figure 1).

Similar images of gryphons and two coiled snakes carved on a marble vase have been found recently in Jiroft, south eastern Iran, dated to mid third century BCE which at present lacks contextual iconographic interpretation (Figure 2), but the imagery is highly suggestive of related

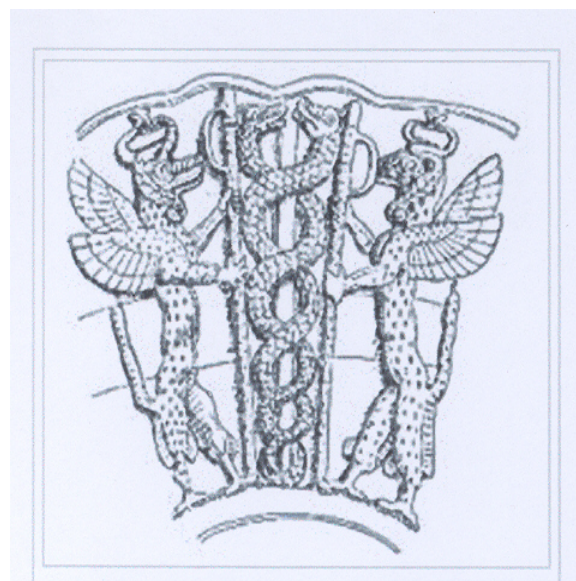


Figure 1. This image is carved on a green steatite vase made for king Gudea of Lagash of Sumer (dated between 2200 – 2025 BCE) which is in the Louvre Museum in Paris²

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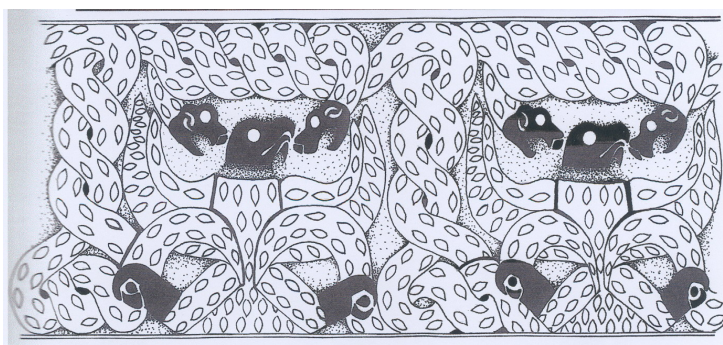


Figure 2. Marble vase found in Jiroft with a tracing of its iconography shown on the right showing a gryphon holding two coiled serpents in its talons

symbolic significance.³

Of a somewhat later date (about 1600 BCE) is the Minoan Snake Goddess (Figure 3) who is probably associated with the Cretan myth about Glaukos 'where the snake knows the herb of rebirth and resurrection'.⁴

And finally to end this brief allusion to ancient symbolic association between the serpent and the art of healing I have reproduced the illustration of the statue of the Mithraic Kronos or Zervan Akarana found at Ostia, Italy dated 190 CE, incorporating so many symbols including that of Aesculapius (Roman) and the Caduceus of Mercury⁵ (Figure 4).

Asclepius

Asclepius (Latin Aesculapius) was a late comer to the Greek pantheon of Olympian gods.

The origins of Asclepius the physician is rather uncertain but around the 6th century BCE there was

a cult of Asclepius and a sanctuary in Epidaurus in the northeastern Peloponnese.⁶

Originally, in the Homeric tradition in the Iliad



Figure 4



Figure 3. The Minoan Snake Goddess

(circa 9th to 10th century BCE) Asclepius is described as a king whose two sons, Machaon and Podalirius, were described as skilled physicians in the Greek army at Troy.⁷

The first recorded mention of Asclepius as the son of the god Apollo, and hence a demigod, is by Hesiod, the Greek oral poet who lived in the latter part of the 8th century BCE. Hesiod, who together with Homer is considered as one of the earliest Greek poets, sang thus: "Asclepius, son of Apollo and healer of sicknesses, in the Dotian plain fair Coronis, daughter of king Phlegyas, bore him, a great joy to men, a soother of cruel pangs ..."⁸

By about 500 BCE the myth of Asclepius as a demigod or a hero-god was well established in some areas of the Peloponnese and most physician-

healers were referred to as Asclepiads; the followers of Asclepius. Pindar, the Greek poet (522 – 443 BCE), immortalized the story in his third Pythian Ode, where Asclepius dies “speared by the lightning flash” hurled by Zeus in punishment for retrieving a man from death when lured by gold.⁹

In 420 BCE a plague began to ravage Athens and claimed the lives of almost one third of its population. After the failure of appeal to all the gods in the Athenian Pantheon for a cure, the Athenians imported the worship of Asclepius from Epidaurus. Within a brief period of time the plague receded and the credit was laid upon Asclepius and so he was deified and joined the Olympian pantheon.¹⁰

The Hellenic Greeks who were adept at spinning romantic tales for mythic origins of their deities lost no time.

The myth of Asclepius

Asclepius was the son of the god Apollo and the mortal woman Coronis.

Apollo was a handsome (even beautiful) beardless youth (Kouros), the son of Zeus and one of the most important of the twelve Olympian deities, who had many attributes.

He had many lovers, both male and female, several of whom were mortal humans, but most of his love affairs had tragic outcomes, as did his affair with Coronis.

The myth was first recounted by Pindar, as mentioned above, which ends with Asclepius' death, but gradually after 420 BCE when he is raised to the status of an Olympian god the myth becomes more elaborate.

In 293 BCE “a deadly pestilence had corrupted Rome” and when their “healers’ arts were of no avail; they sought the aid of heaven”.¹¹ The Romans sent an envoy to Apollo’s oracle at Delphi where they were instructed to seek the help of Apollo’s son (Asclepius) at Epidaurus. The god, in the shape of a huge serpent embarked on the Roman ship, went to Rome and eradicated the pestilence. By 8 CE when Ovid, the Roman poet, recounts the myth in his *Metamorphoses*, Asclepius has been resurrected to an Olympian god of healing and medicine.¹²

Briefly the story, according to Ovid is as follows:

While the nymph Coronis was pregnant with Apollo’s child (Aesculapius), she fell in love with a mortal youth and was unfaithful to Apollo.

Informed of this treachery by a passing raven, Apollo, in his rage shot an arrow into the heart of Coronis, who while dying told him of being pregnant with his child and promptly died. While Coronis’ dead body was placed on the funeral pyre, Apollo, the repentant lover, rips open her dead body and snatches his son, Aesculapius, from the engulfing flames and takes him to the wise centaur, Chiron to raise. Chiron’s daughter, Ocyrhoë, on seeing the infant, makes a prophecy that he will become a “healer of all the world....and will have the ability to restore the dead” but he will be stopped by Zeus’ lightning bolt, whence he shall die but will be resurrected as a deity by Zeus himself.

Chiron teaches Aesculapius the secrets of all the herbal medicines and the art of healing, and by using the blood of the Gorgon which the goddess Athena had given him, Aesculapius was able to resurrect the dead, including such outcasts as Hippolytes, Lycurgus, Capaneus and Glaukos the son of Minos. For interfering in the natural laws of mankind and after a complaint by Hades, the god of the underworld, Zeus killed Aesculapius with a thunderbolt, but later, after intervention from Apollo, Zeus realized Aesculapius’ service as a physician to humanity and resurrected him as an Olympian deity of medicine and placed him in the sky as the constellation Ophiucus (the snake holder).

So ends the Roman myth of Aesculapius as told by Ovid in the *Metamorphoses*.

There are, however, several other stories associated with Asclepius which are of interest and worth a mention in this brief review.

Apart from his two sons mentioned earlier (from Homer’s *Iliad*), he had several daughters including Hygieia (cleanliness), Meditrina (medicine), and Panacea (all healing) who symbolized different aspects related to medicine and wellbeing.¹⁰

Of special interest may be the references to him as physician by notable ancient Greeks including Hippocrates, Socrates, Plato and Galen.

Plato, in his dialogue *Protagoras* mentions Hippocrates (460 – 377 BCE) the physician from the island of Cos, as an Asclepiad.¹³ The Hippocratic Oath begins as such: “I swear by Apollo, Asclepius, Hygieia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment, the following Oath....”¹⁴

And in the same vein Plato mentions as the last

words of Socrates “Crito, we owe a cock to Asclepius; pay it therefore; and do not neglect it.”

In the second century CE, Galen, the famous physician to the Roman emperor, Marcus Aurelius, also appeals to Aesculapius for help in healing the ailing emperor.¹⁵ And so we have followed the story of Asclepius, a minor local deity (‘daemon’) of healing from Epidaurus from the 6th century BCE to his deification in Athens and then his importation into Rome as the god (‘theos’) Aesculapius, until the 2nd century CE during the time of Galen and the emperor Marcus Aurelius.

The decline of Aesculapius

During the second century CE Christianity was on the rise in the Roman Empire and pagan gods including Mithras and Aesculapius (as well as the other gods of the Greek and Roman pantheon) were on the wane. The early church fathers and Christian apologists including the martyr Justin, suggested a comparison between Christ and Aesculapius, in that they were both healers and saviours, especially caring for the poor and the destitute, and that they were both mortal men on this earth and that they were both killed and then resurrected as a god in the heavens.¹⁶

By early 4th century CE and the adoption of Christianity as the official state religion of the Roman Empire by the Emperor Constantine, the worship and the cult of Aesculapius was stamped out and his temples were destroyed.¹⁷

The staff and the single serpent

Asclepius has always been “traditionally depicted as a bearded man wearing a robe that leaves his chest uncovered and holding a staff with his sacred single serpent coiled around it (Figures 5 and 6).”¹⁸ As mentioned earlier, the contextual significance and the symbolic association of the serpent and the staff remains mysterious. There is historical attestation that in the sacred grove of Asclepius in Epidaurus there was a sculpture made by Thrasymedes (ca 375 BCE) of Asclepius holding a staff with a single serpent entwined around it.¹⁹ The origin of the staff carried by Asclepius may be quite mundane and is explained by some authors as such: “The early Greek physicians were craftsmen who toured the countryside soliciting business....and carried instruments, medicines, and a staff...to help them over the rugged terrain”¹⁷ which seems a reasonable assumption. The symbol of the snake coiled around the staff, however, must have other



Figure 5. Asclepius, the Greek physician traditionally depicted as a bearded man wearing a robe and holding a staff in his left hand with the single serpent entwined around it

connotations. A more ancient significance may be related to renewal of youth as the serpent sheds its skin or whatever symbolism the Sumerian god Ningizzida and other mythological associations that the serpent had with the art of healing, as mentioned in the introduction to this article, which are not available at the present for further elucidation of its contextual significance.

There is, however, historical attestations (Edelsteins ref. 19) that from ancient times in Greece, and later, in Rome, in the shrines and temples of Asclepius, harmless snakes belonging to the family Colubridae and classified as *Elaphe*



Figure 6. The wooden staff of Asclepius with the single serpent entwined around it as the symbol of medicine



Map 1. A map of ancient Greece depicting the principal religious sanctuaries of the Greek Aegean and the geographical relations of Athens to Epidauros, the site of the sanctuary of Asclepius, as well as Delphi, the site of the oracle of Apollo

longissima, were kept in association with the healing rites of Asclepius (Keith Blayney ref. 18), but their exact function remains elusive. There is a quaint reference to the probable origin of the Asclepian staff and the single entwined serpent in the article written by Keith Blayney¹⁸ which relates this symbol to the ancient Greek physicians practice of extracting the common parasitic filarial worm, or the 'Guinea worm' (*Dracunculus medinensis*) from their patient's subcutaneous tissues by cutting a slit in the skin, just in front of the worm's path, and carefully winding the worm around a stick a little at a time until the whole worm was extracted in its entirety. This parasitic worm was very common in north Africa and the Aegean at that time and still is a common pest in Africa today with no modern therapy but to extract the worms in exactly the same fashion as they did in those days in ancient Greece at the time of the Asclepiads in 600 BCE as well as the method described in the Egyptian Ebers papyrus from 1550 BCE.²⁰

The resurrection of the staff as a medical symbol

As mentioned earlier, with the ascendancy of Christianity in the Roman Empire and later in European Christendom, from the 4th century CE onwards, the worship, myth, rituals, and the symbols of Asclepius, together with all other pagan religions and practices were strongly suppressed, after having incorporated some of those myths and rituals within the corpus of Christian rituals and beliefs. It was not until the 16th and 17th centuries, after the reformation, and the invention of the printing press that the symbols of Asclepius (and erroneously, the Caduceus of Hermes) were once again resurrected as those of the medical profession. In the 17th century the figure of Asclepius began appearing on medical medals and calling cards as a representative symbol of the medical profession. Both these symbols, the Asclepian rod and the caduceus of Hermes were popularized by some European medical publishing houses as their printers' marks, especially as

frontispieces to their pharmacopoeias (Keith Blayney see ref. 18).

The Caduceus of Mercury (Roman) and the Karykeion of Hermes (Greek)

In the 19th and the 20th centuries, the Caduceus of Mercury (Karykeion of Hermes) also became associated with medical practice, as synonymous with the staff of Asclepius. The Caduceus, the magic wand of Mercury, is represented as a short rod entwined by two snakes and topped by a pair of wings.

In the later Greek mythology, Hermes, the youngest of the Olympian gods, the son of Zeus and Maia, was the winged messenger of the gods, conductor of the dead, patron of travelers, and protector of *merchants and thieves*. The origins of Hermes as a phallic god of boundaries in ancient Greece before he was incorporated into the Olympian pantheon,²¹ is not relevant to this essay. His symbols included the tortoise, the cock, the winged sandals, and the Karykeion (Caduceus) (Figure 7). The magic wand with the entwined double serpents was common to several ancient deities or myths, including the Egyptian Thot, the Phoenician Taaut, the Sumerian Ningizzida (Figure 1), and of course its equivalent in Rome as the Caduceus of Mercury (Figure 8).

By the 7th century CE Hermes became associated with alchemy and the alchemists were known as Hermeticists, with occult associations, which remained so until the Renaissance in Europe, when by the 17th century, Hermes was associated not only with alchemy but also with astrology, ceremonial magic, and the occult arts



Figure 7. The Greek god Hermes

(Keith Blayney ref. 18). It is noteworthy that as Walter Burkert mentions,²¹ Hermes and his Roman counterpart, Mercury, were the patrons of general commerce as well as the cunning of thieves and liars.

So it becomes appropriate at this juncture to ask why the Caduceus of Hermes and Mercury, who were the patrons of commerce and thieves, became a symbol of medicine and its practice.

It seems unlikely that the blame rests wholly on the shoulders of John Churchill of the London medical publishing house, for he also used the

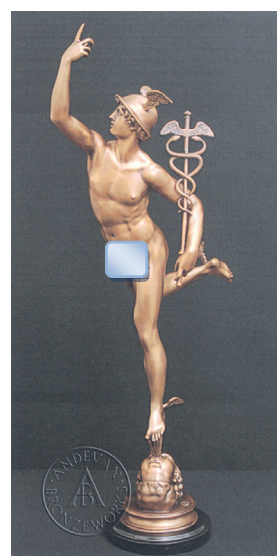


Figure 8. The Roman god Mercury

Asclepian rod as well as the Caduceus as his printer's mark.

It appears that this erroneous misappropriation of the Caduceus as a medical symbol resulted from a misunderstanding by the U.S. Army Medical Corps (USAMC) at the beginning of the 20th century. In 1902, at the suggestion of Captain Frederick Reynolds, an assistant surgeon in the USAMC the Caduceus became a collar insignia for all the personnel in the USAMC despite some initial resistance. Captain Reynolds insisted that the Caduceus was used by many European army medical corps, including the British, which of course was incorrect, and in due course the 'golden caduceus' was adopted by the USAMC (Figure 9).²²

In 1993, Friedlander surveyed 242 logos or insignias of medical or health related organizations in the U.S. and found that professional medical organizations tended to use the staff of Asclepius (62%) as their insignia, but commercial organizations (including pharmaceutical



Figure 9. The winged caduceus of mercury which became the collar insignia of the U.S. Army Medical Corps (USAMC) in 1902

companies) were more likely to use the Caduceus in their logos (76%).²³ The significance of this observation is left to the reader's conclusions, considering the historical fact that Hermes and his Caduceus were associated with commerce, thieves and liars.

Conclusion

In this essay I have briefly summarized the myth and the historical background of the Greek Asclepius (and his Roman equivalent Aesculapius) in relation to medicine and the adoption of the image of his rod with its entwined single serpent as the symbol of medicine in the Western world. I have also mentioned the Greek god Hermes (and his Roman equivalent Mercury) carrying the



Figure 10. Mercury (Hermes) and a merchant approach a disapproving Asclepius [An engraving by Aubin Louis Millin, Paris 1811]

Caduceus, the winged rod with its entwined double serpents, and the misappropriate role of this symbol in European medical institutions.

In the 20th century, these Greek symbols of medicine have gained universal recognition, yet it is unfortunate that no Asian medical symbols have ever been proposed or promulgated despite the fact that historically, Chinese, Indian, and Iranian medicine have been instrumental in the evolution of medical theory and practice at the same time as, if not preceding, that of the Greeks.

In part two of this essay, I shall tentatively propose an ancient Aryan Physician, Se'na, who was later enshrined in Iranian mythology as the Simorgh, as an appropriate symbol, at least for Iranian medicine.

References

- 1 Mineka S, Cook M. Social learning and the acquisition of snake fear in monkeys. In: Zentall T, Galef B, eds. *Social Learning: Psychosocial and Biological Perspectives*. Hillsdale, NJ: Erlbaum 1988; 51 – 73.
- 2 Serpent (symbolism). Available from: URL: [http://en.wikipedia.org/wiki/Serpent_\(symbolism\)](http://en.wikipedia.org/wiki/Serpent_(symbolism)) (Accessed on 6/3/2009)
- 3 Kargar MR. Culture of Halil Roud and Jiroft, *The catalogue of Exhibition of Select Restituted Objects*. Tehran: The National Museum of Iran; 2005: 36.
- 4 Minoan Snake Goddess. Encyclopedia Mythica. Available from: URL: http://www.pantheon.org/articles/m/minoan_snake_goddess.html (Accessed on 6/3/2009)
- 5 The Doctrine of the Mithraic Mysteries; 238. Available from: URL: <http://www.sacred-texts.com/cla/mom/mom07.htm> (Accessed on 6/5/2009)
- 6 Farnell RL. The Cult of Asklepius. In: Farnell RL, ed. *Greek Hero Cults and Ideas of Immortality*. Oxford: Clarendon Press; 1921.
- 7 Homer. The Iliad [translated by Fagles R]. Penguin Classics; 1998.
- 8 Frazer RM. *The Poems of Hesiod*. Norman: University of Oklahoma Press; 1983.
- 9 Pindar, Pythian Three [translated by Nisetich FJ]. Baltimore and London: Johns Hopkins UP, 1980, 169 – 173. Available from: URL: <http://216.71.135.198/HW/pindar.html> (Accessed on 7/23/2009).
- 10 Asclepius. Available from: URL: <http://www.newworldencyclopedia.org/entry> (Accessed on 6/7/2009)
- 11 Ovid. *The Metamorphosis*. Book 15; 622 – 744. Available from: URL: <http://www.poetryintranslation.com/PITBR/Latin/Metamorph15.htm>
- 12 Ovid. *The Metamorphosis*. Book 2; 596 – 676. Available from: URL: <http://www.poetryintranslation.com/PITBR/Latin/Metamorph2.htm> (Accessed on 7/24/2009)
- 13 Plato. *Protagoras*. Available from: URL: <http://classics.mit.edu/Plato/protagoras.html>

- 14 The Hippocratic Oath. Available from: URL: http://www.nlm.nih.gov/hmd/greek/greek_oath.html
- 15 Hart GH, Forrest M St. J. *Asclepius: The God of Medicine*. London: Royal Society of Medicine Press; 2000: 1 – 6.
- 16 Bailey JE. Asklepios: Ancient Hero of Medical Caring. *Ann Intern Med*. 1966; **124**: 257 – 263.
- 17 Hart GD. Asclepius, God of Medicine. *Can Med Assoc J*. 1965; **92**: 232 – 236.
- 18 Blayney K. The Caduceus vs. the Staff of Asclepius 2005. Available from: URL: <http://drblayney.com/Asclepius.html>
- 19 Edelstein EJ, Edelstein L. *Asclepius: A Collection and Interpretation of the Testimonies*. U.S.A.: John Hopkins Press; 1945: 383.
- 20 Available from: URL: http://en.wikipedia.org/wiki/Ebers_Papyrus (Accessed on 8/2/2009)
- 21 Burkert W. *Greek Religion*. U.S.A.: Harvard University Press; 1985.
- 22 Wilcox RA, Whitman EM. The Symbol of Modern Medicine: Why One Snake Is More Than Two. *Ann Intern Med*. 2003; **138**: 637 – 677.
- 23 Friedlander WJ. *The Golden Wand of Medicine*. New York: Greenwood Press; 1992.